

Fig. 1



Fig. 2A

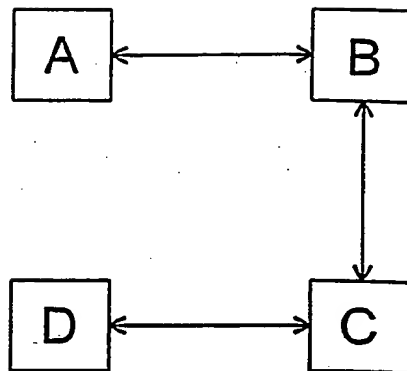


Fig. 2B

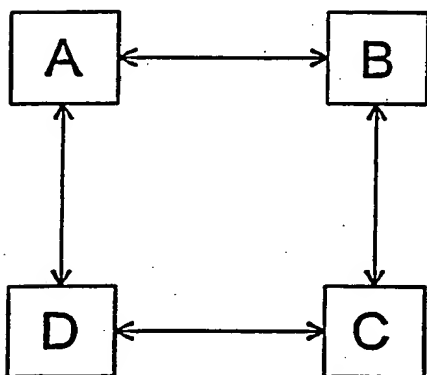


Fig. 2C

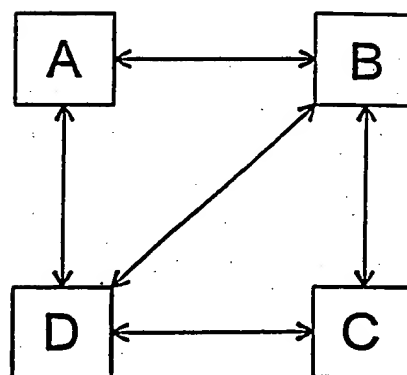


Fig. 2D

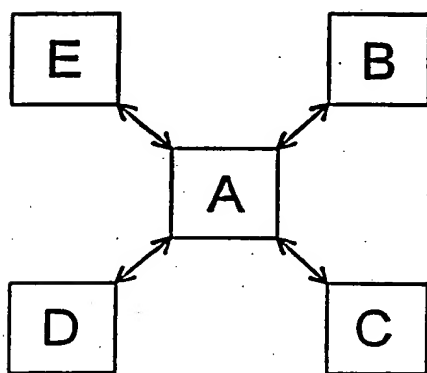


Fig. 2E

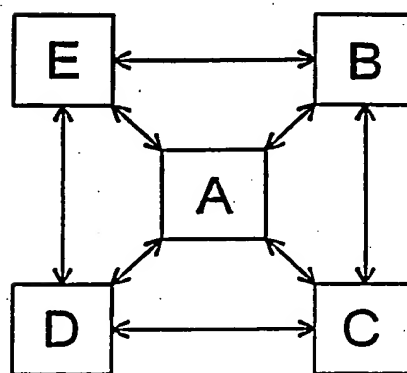


Fig. 2F

100

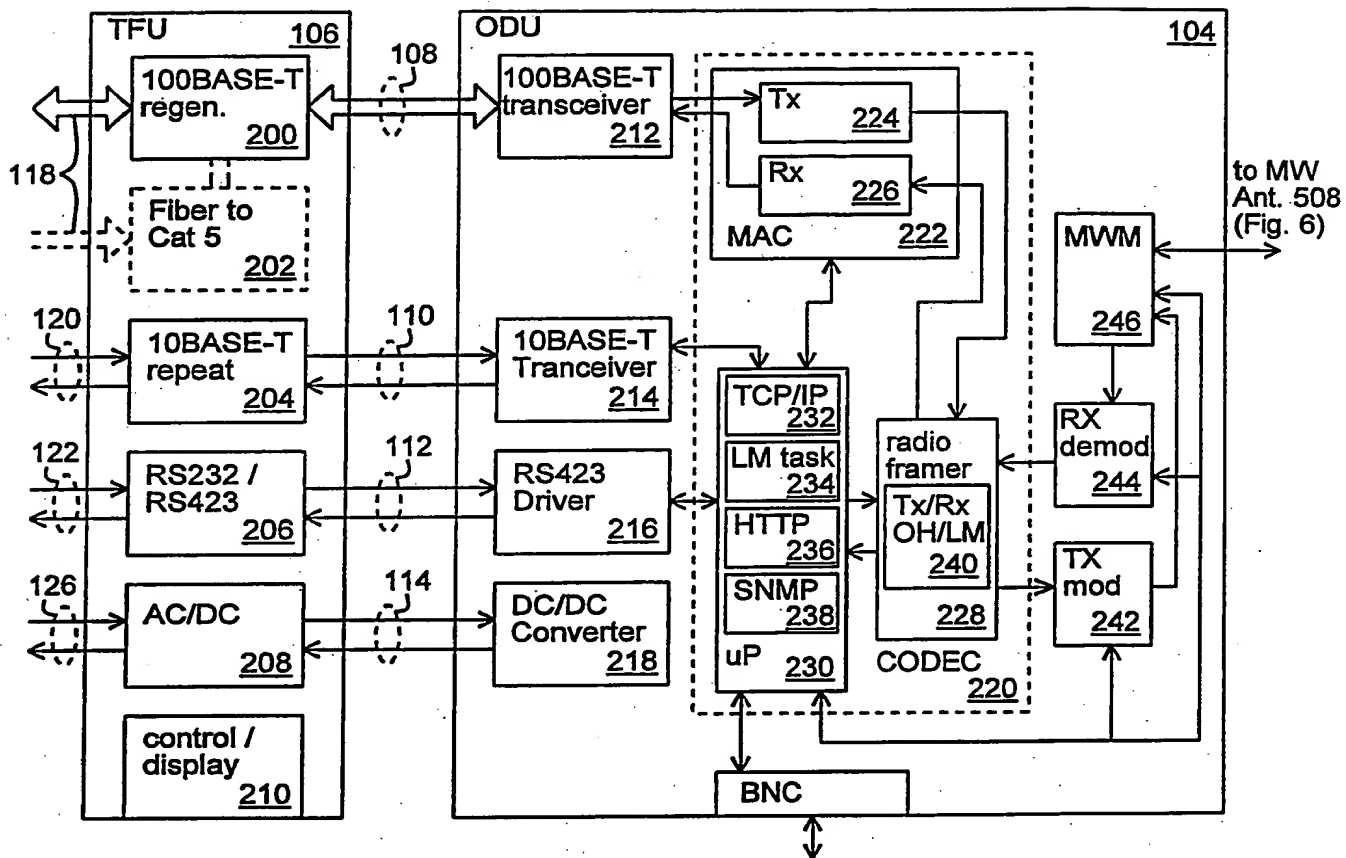


Fig. 3

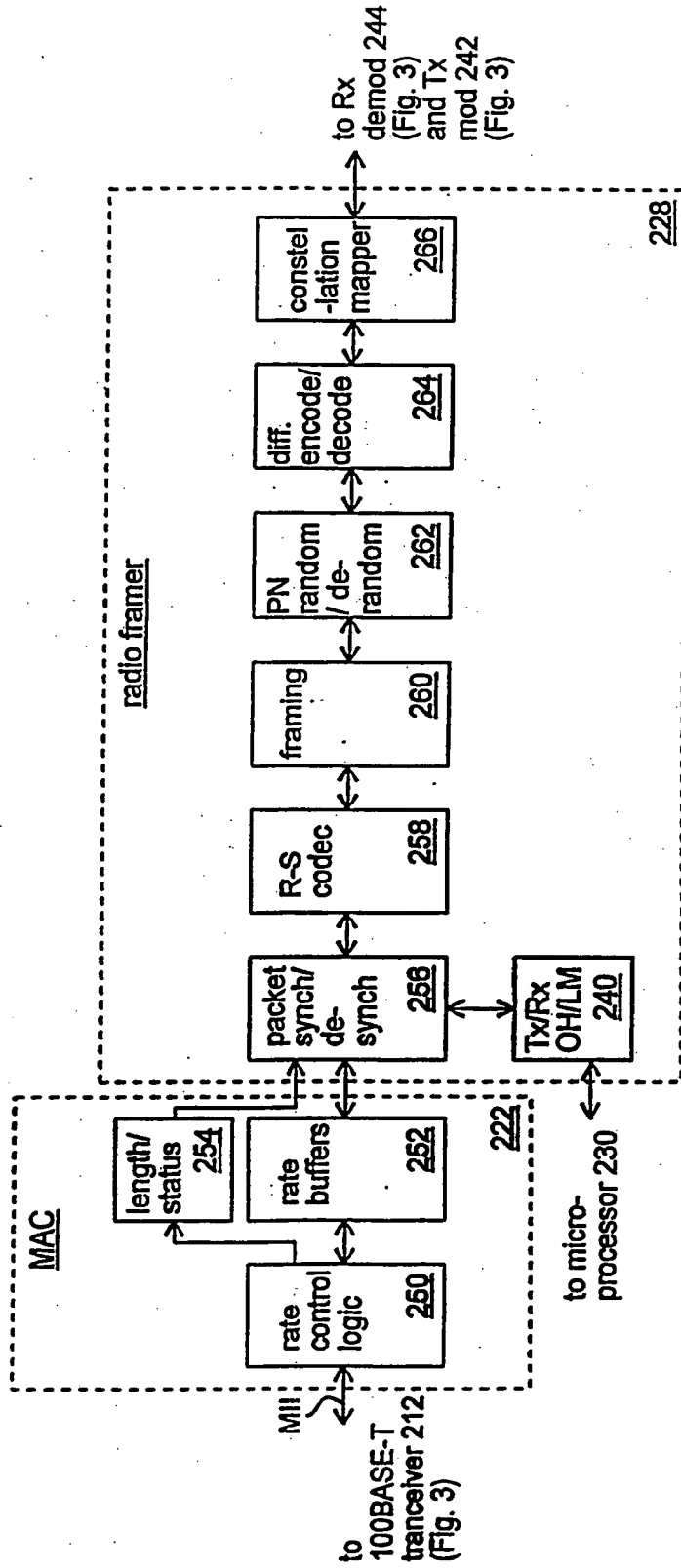


Fig. 4



300 ↗

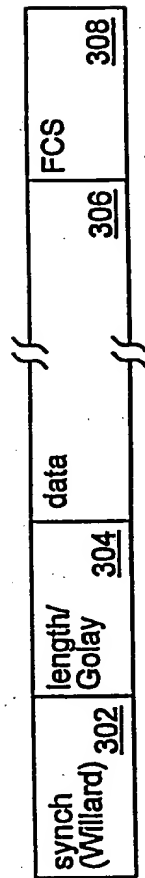


Fig. 5



350 ↗

synch	aux	data	R-S parity
<u>352</u>	<u>354</u>	<u>356</u>	<u>358</u>

Fig. 6

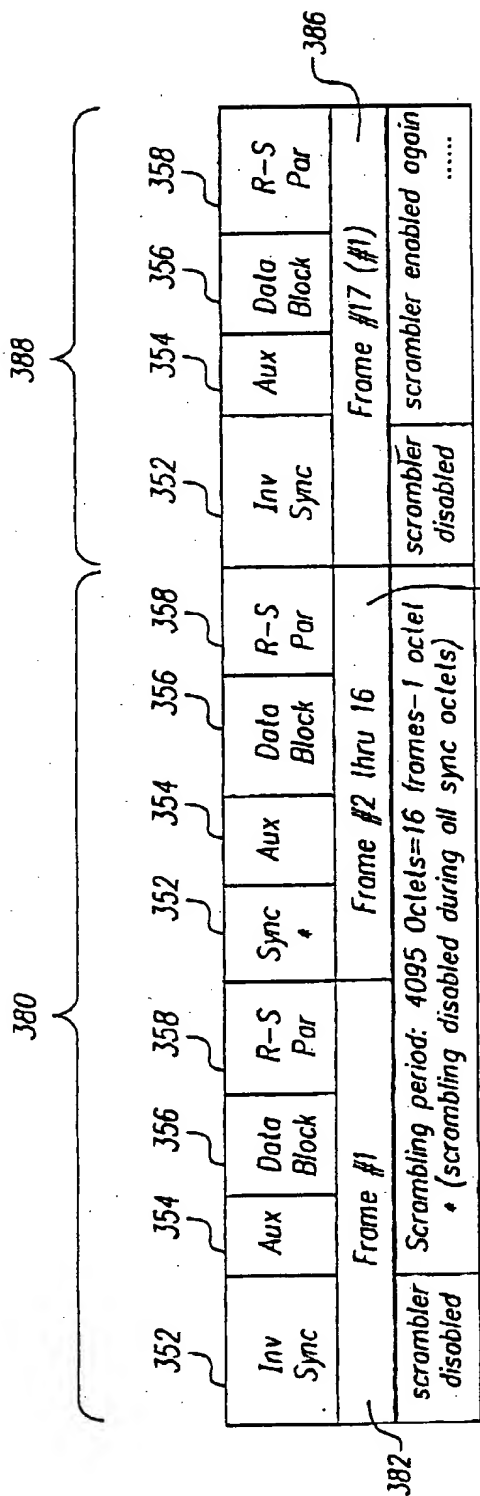
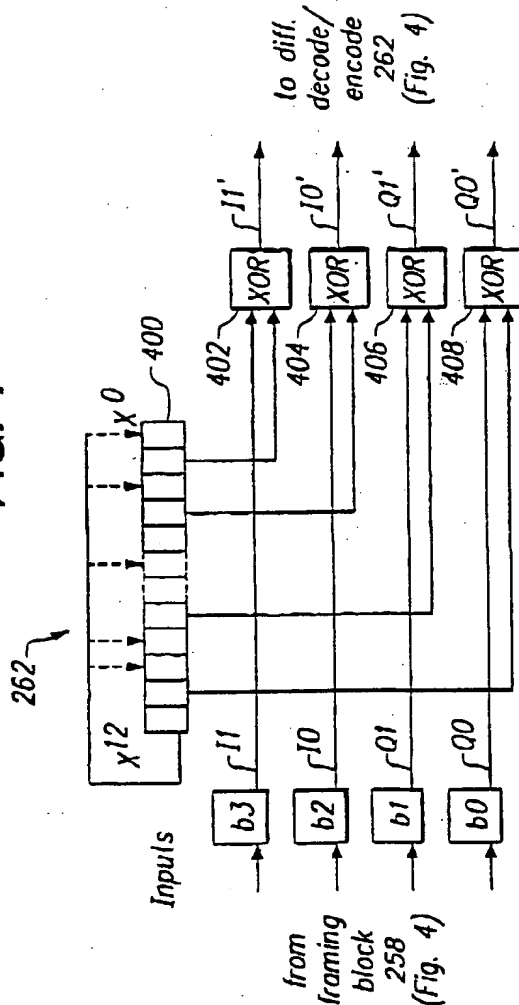


FIG. 7



$Quad = 2 \cdot I1' + Q1'$; - Map Quadrant Tag [0 1 2 3]
 $Phi = [0 \ 1 \ 3 \ 2]$; - to Angle = [0 1 2 3]
 $Angle = Phi(Quad)$
 $Sum = (Sum + Angle) \text{ modulo } 4$;
 $I1'' = \text{bit 1 of Sum}; \quad I0'' = I0'$;
 $Q1'' = \text{bit 0 of Sum}; \quad Q0'' = Q0'$;

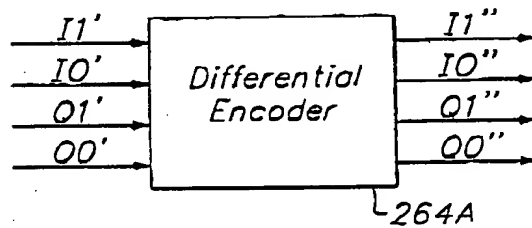


FIG. 9

$Angle = 2 \cdot RxIs' + RxQs'$;
 $Phi' = [0 \ 1 \ 3 \ 2]$;
 $Diff = (Phi'(Angle) - Phi_0) \text{ modulo } 4$;
 $Phi_0 = Phi'(Angle)$;
 $RxIs = \text{bit 1 of } Phi'(Diff); \quad RxIm = RxIm'$;
 $TxIs = \text{bit 0 of } Phi'(Diff); \quad RxQm = RxQm'$;

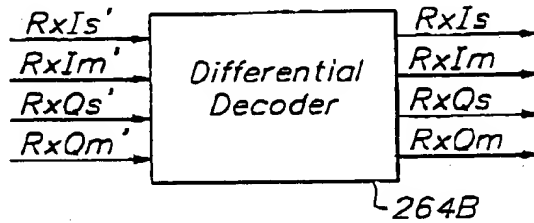


FIG. 10

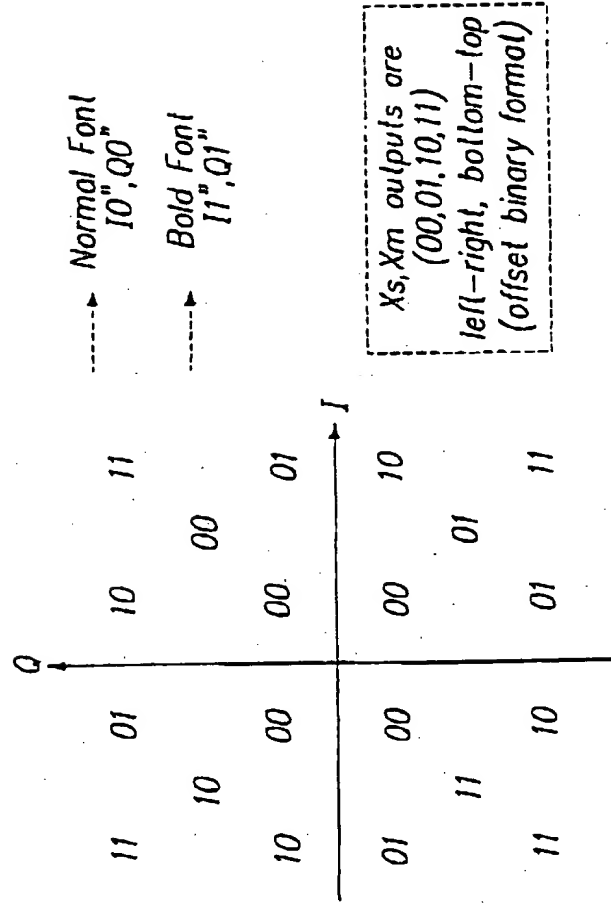


FIG. 11

Input Symbols
 Shown in Output
 Symbol Position

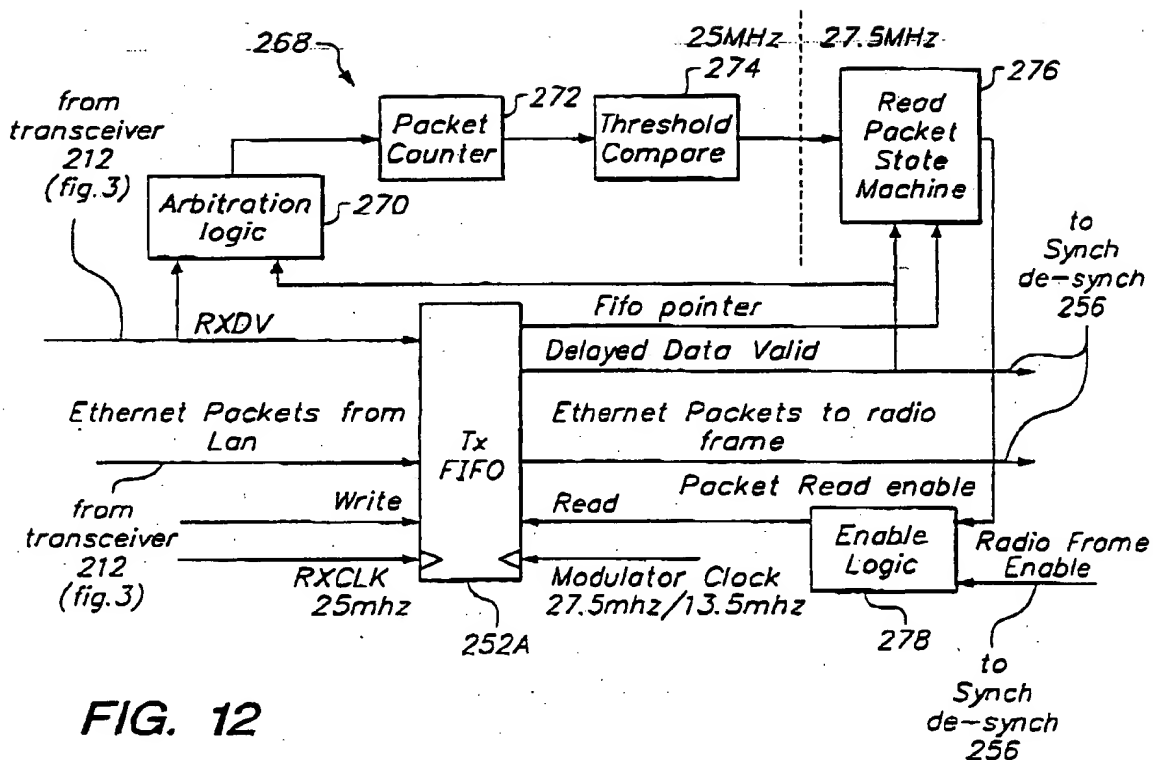


FIG. 12

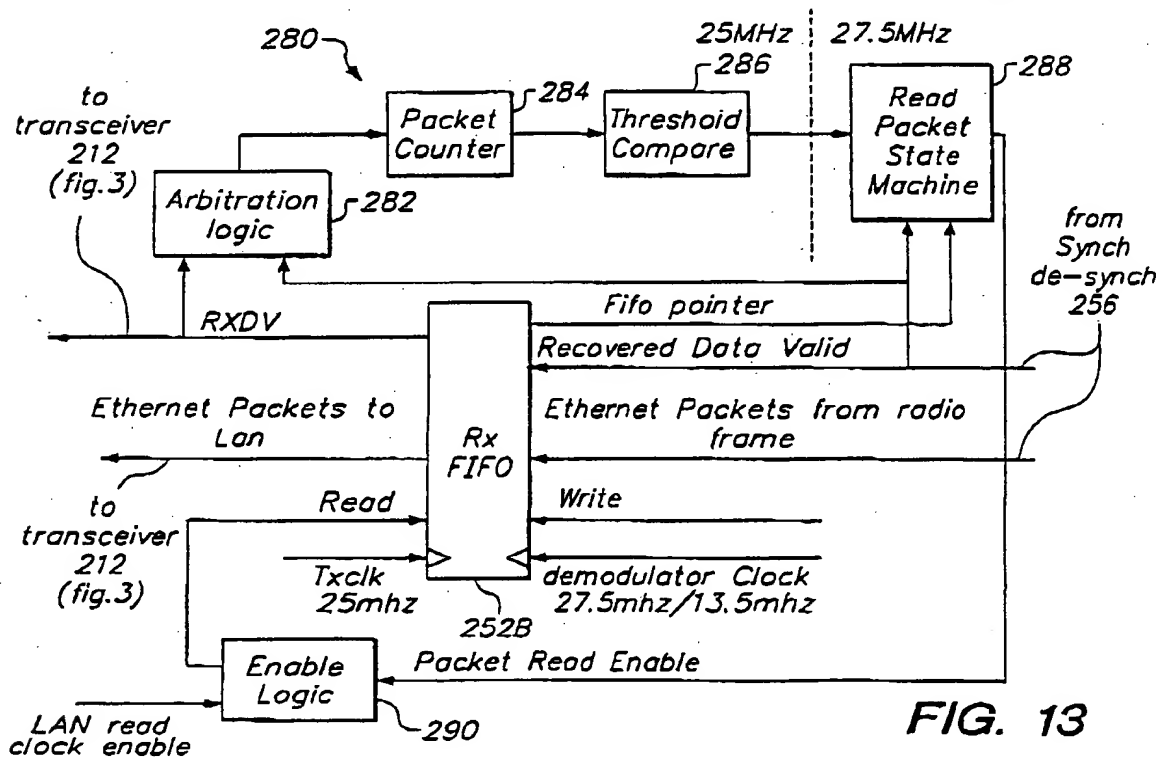


FIG. 13

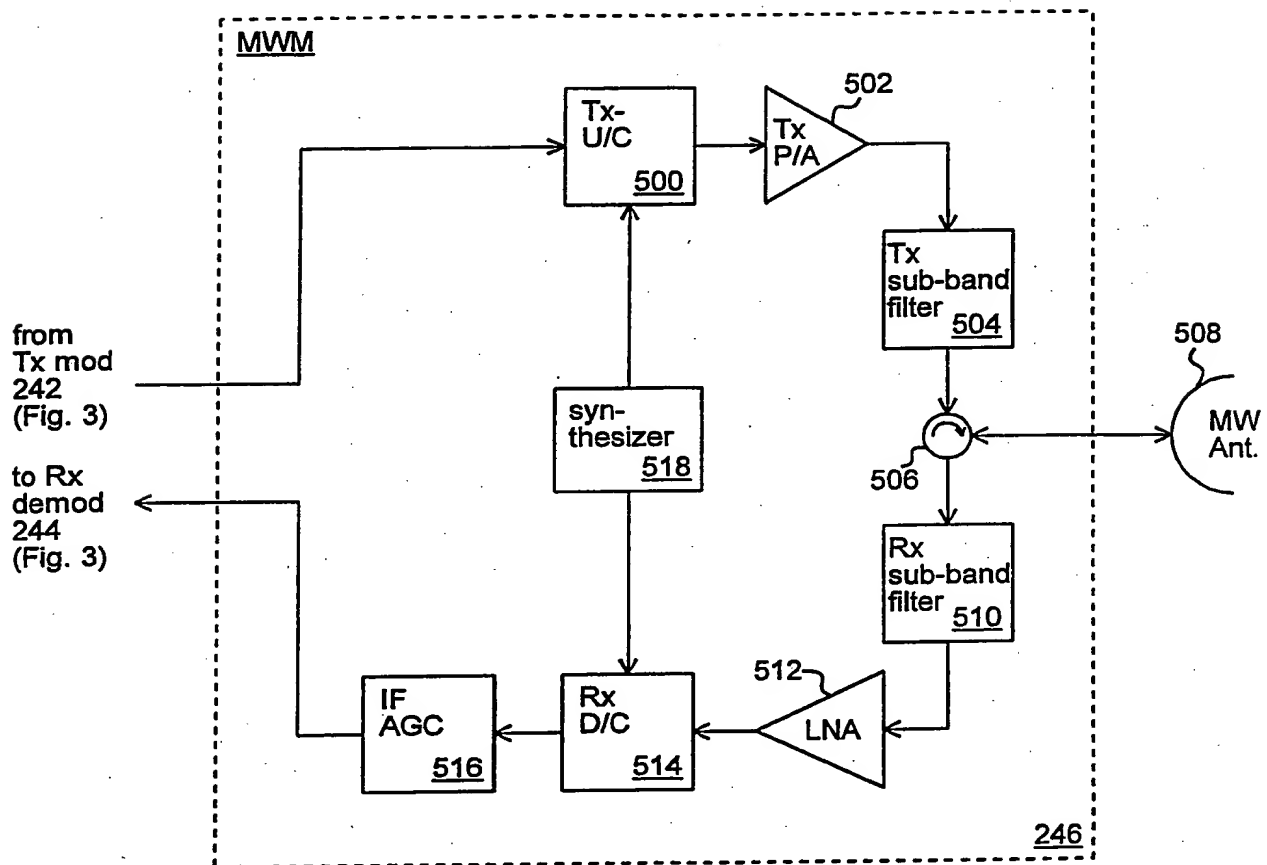


Fig. 14

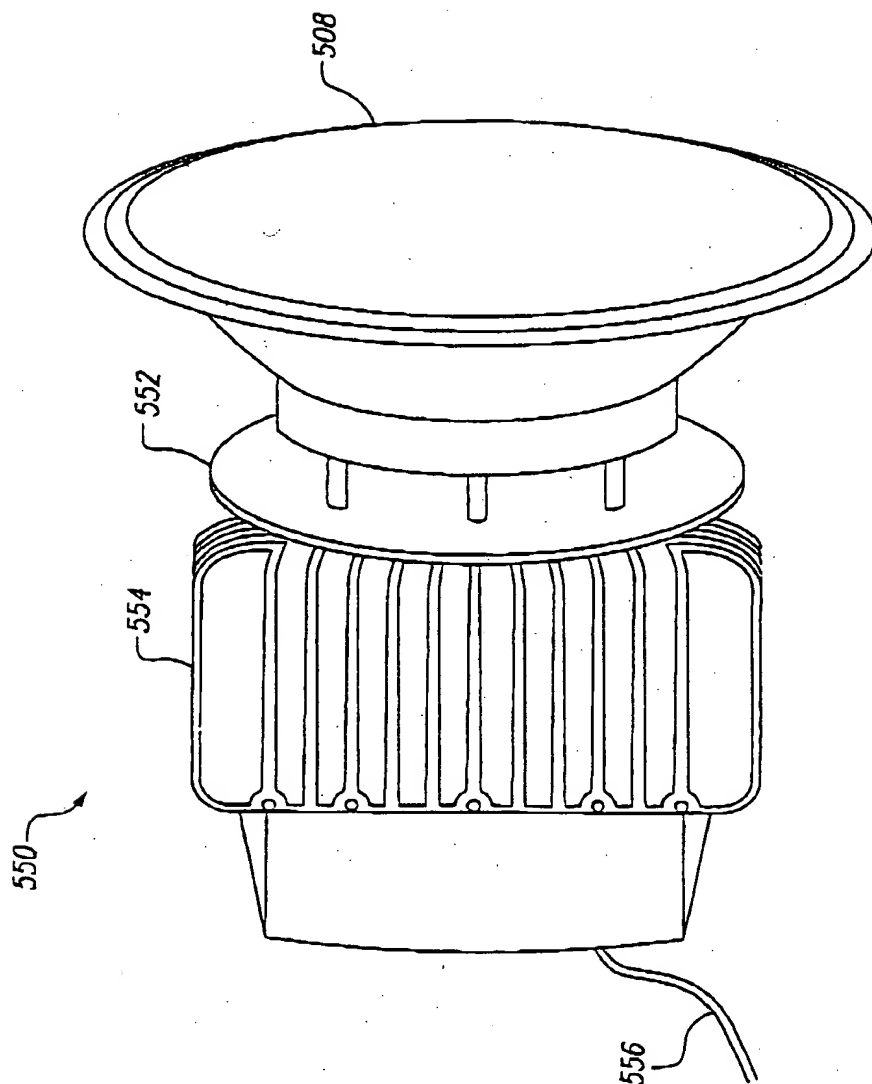


FIG. 15

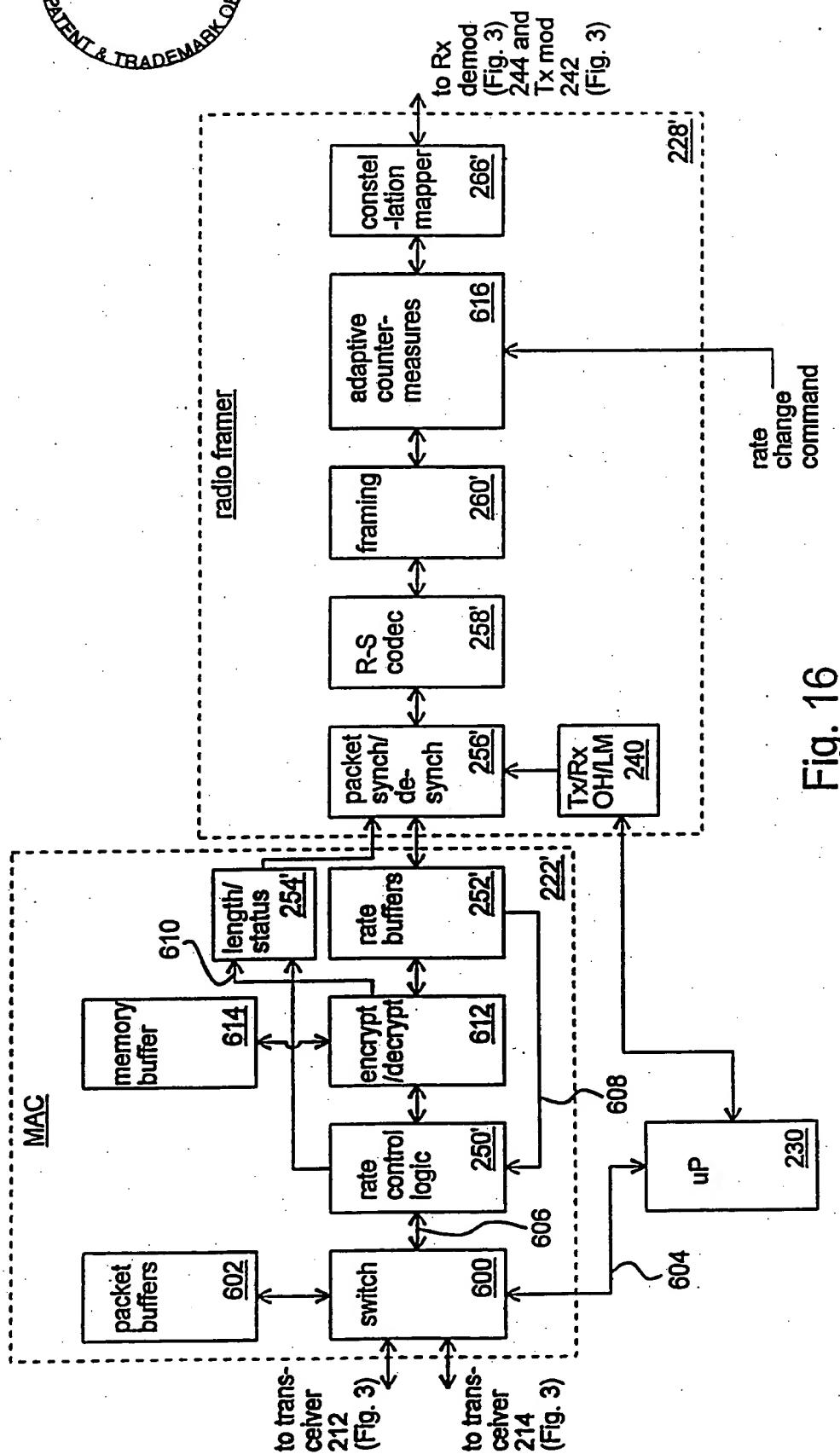


Fig. 16

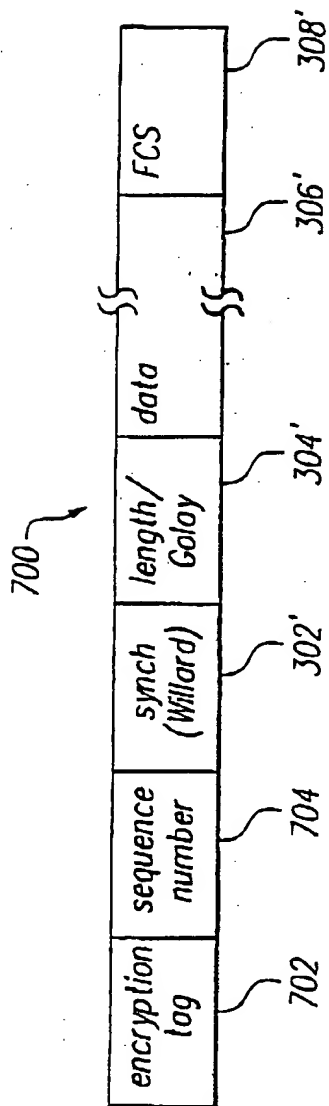
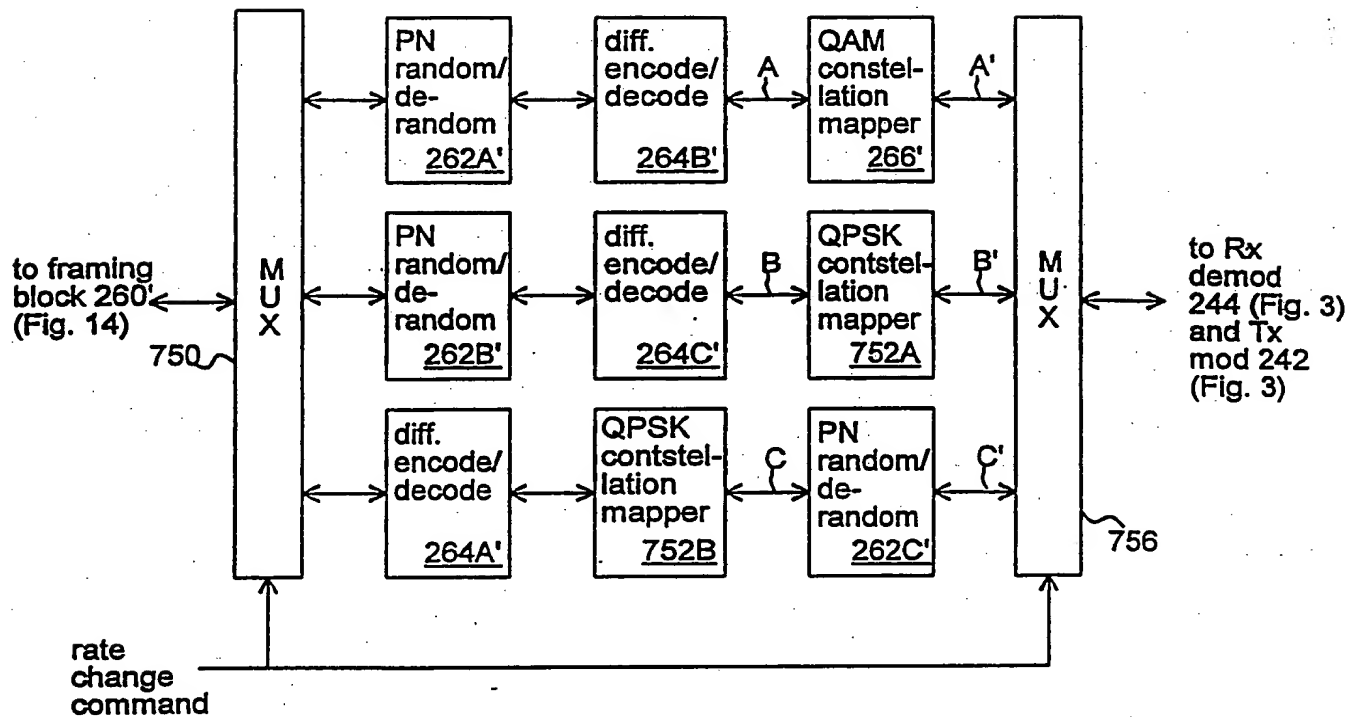


FIG. 17



616



A: data rate = 4 bits/symbol, symbol rate = 27.5 Msymbols (mega-symbols)/second

A': data rate = 4 bits/symbol, symbol rate = 27.5 Msymbols/second

B: data rate = 2 bits/symbol, symbol rate = 27.5 Msymbols/second

B': data rate = 2 bits/symbol, symbol rate = 27.5 Msymbols/second

C: data rate = 2 bits/symbol, symbol rate = 3.4375 Msymbols/second

C': data rate = 2 bits/symbol, symbol rate = 27.5 Msymbols/second

Fig. 18

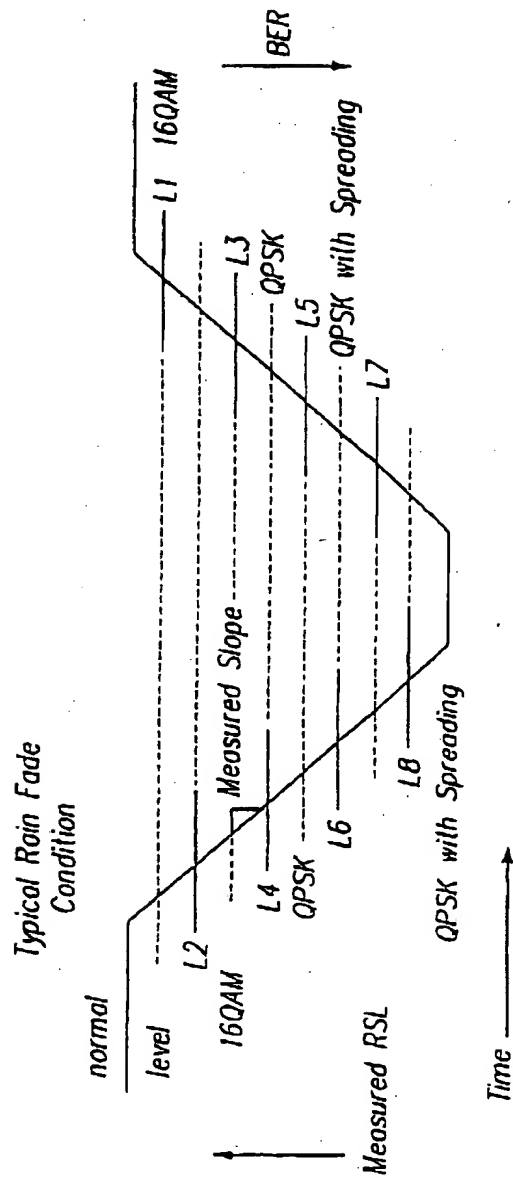


FIG. 19

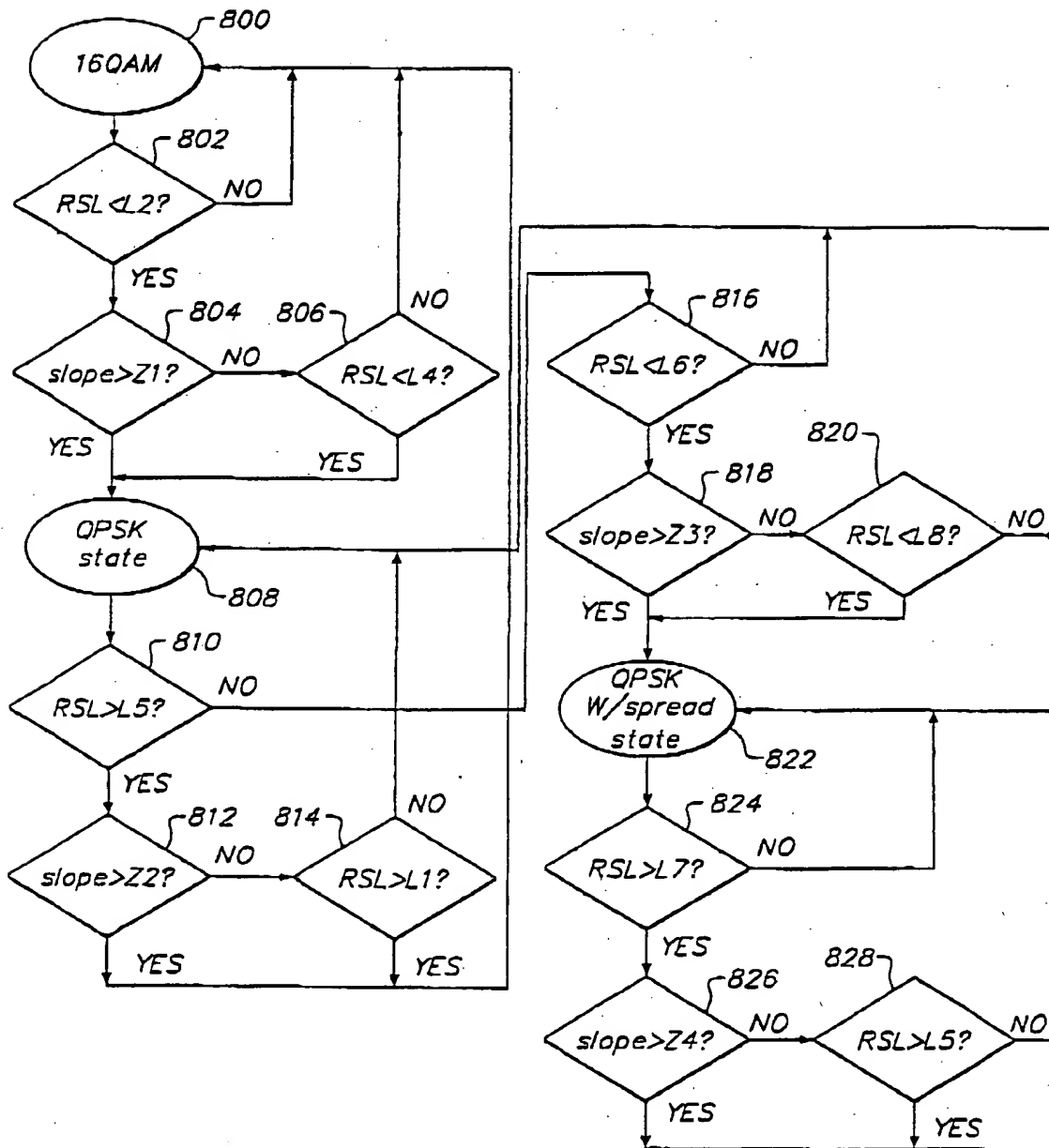


FIG. 20

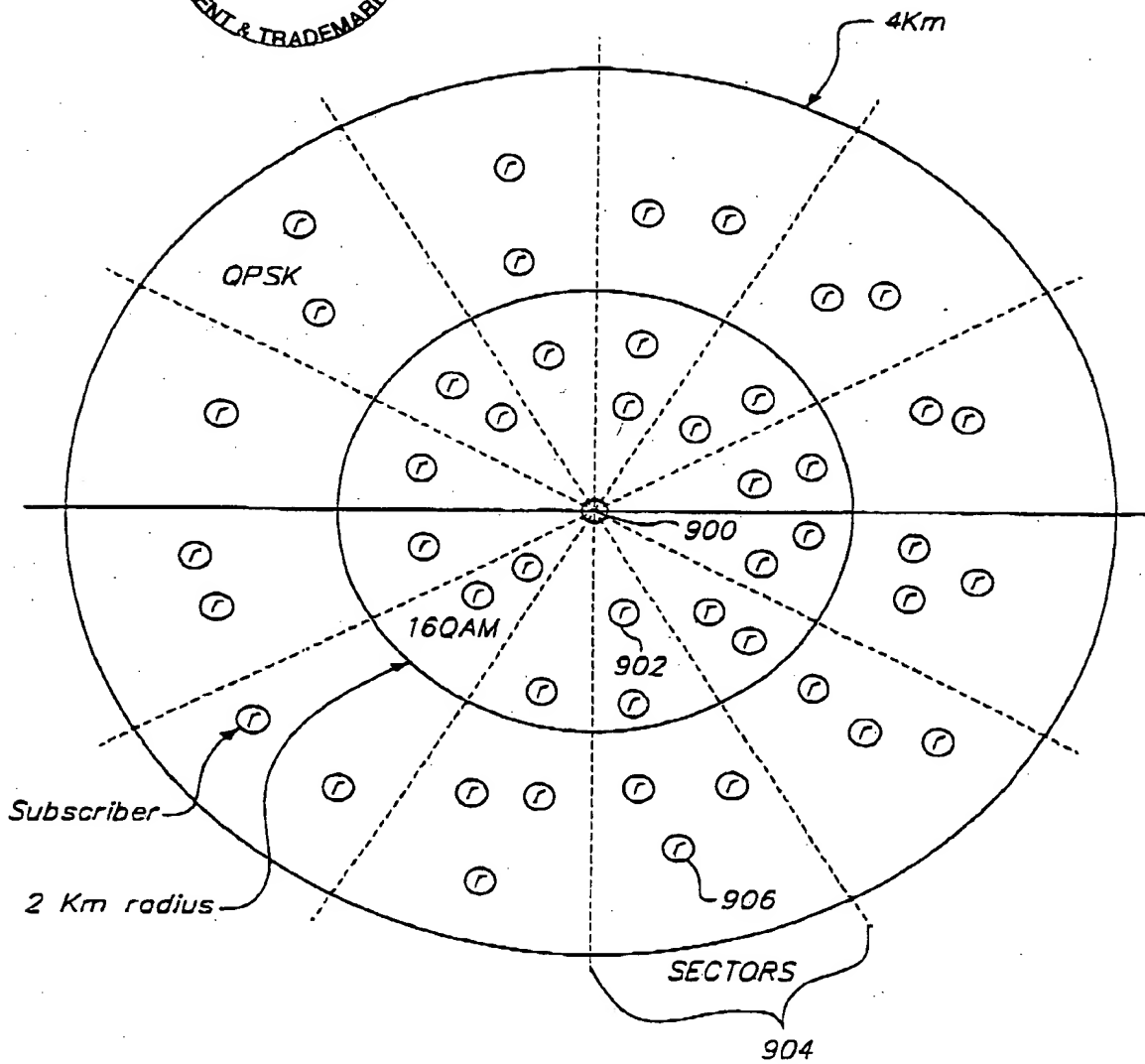


FIG. 21

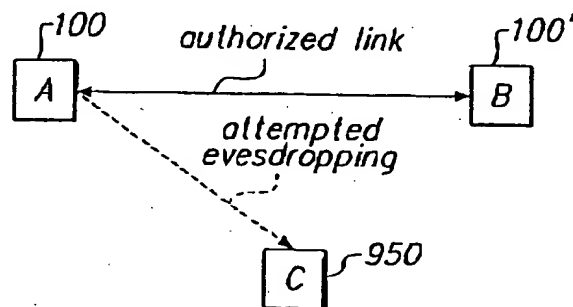


FIG. 22